

## ABSTRACT

The present invention provides compounds and compositions capable of stimulating plant growth, regeneration of plant cells and tissues, and transformation of plant cells and tissues, comprising mono- and multi-substituted auxinic analogues of indole-3-acetic acid (IAA) comprising substituent groups such as halo-, alkyl-, alkoxy-, acyl-, acylamido- and acyloxy-groups. The invention relates to a method of using such mono- and multi-substituted auxinic analogues of IAA to affect growth, regeneration or transformation in monocotyledonous and dicotyledonous plants, as well as in transgenic plant tissues. The invention also contemplates the use of these auxinic IAA analogues in the presence of other plant growth regulators, such as cytokinin, etc., to enhance plant growth.